AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method performed by a storage device for accessing memory, comprising:

generating a block index for a block of data, the block index having a block index value;

mapping the block index to a physical address of a memory based on the block index value and a number N, wherein N is a number of banks ~~bank number~~ of the memory, wherein the mapping makes each one of the block indexes map in turns to one physical address located at different banks so that any logical adjacent block of data is stored physically at different banks of the memory; and

storing the block of data into the memory at the physical address~~; and~~

~~looping to the generating step,~~

~~wherein the mapping step makes each one of the block indexes at all times map in turns to one physical address located at different unconnected banks, and result in any logical adjacent block of data be stored physically at different unconnected banks of the memory.~~

2. (Original) The method of claim 1, wherein the memory supports pipelining access.

3. (Original) The method of claim 1, wherein the memory is a SDRAM.

4. (Currently Amended) The method of claim 1, the mapping ~~steps~~ further comprises:

dividing the block index value by N to obtain a quotient Q and a remainder R; and

calculating the physical address based on Q and R, wherein the physical ~~address=~~address is calculated as the result of Q*block_size+R*bank_size, wherein bank_size equals a size of the memory divided by N, and block_size equals a number bytes stored in a sector of an optical disc.

5. (Canceled)

6. (Currently Amended) A method ~~of~~ performed by ~~operating~~ a disc player with a memory, the memory having at least two memory banks, comprising:

retrieving a block of data from a source ~~media~~medium;

assigning a block index for the block of data, the block index having a block index value;

dividing ~~value of~~ the block index value by N for acquiring a quotient Q and a ~~reminder~~ remainder R, wherein N is ~~bank~~ a number of banks of the memory;

~~calculating the~~ identifying a physical address based on Q and R wherein the block index is interleaved and maps to a physical address located at different banks and any two logically successive blocks of data are stored at different banks of the memory; and

storing the block of data in the memory at the identified physical address.~~; and~~

~~repeating form the retrieving step, wherein the calculating step makes the block index interleaved at all times mapping to a physical address located at different unconnected banks and any two logically successive blocks of data be stored physically at different unconnected banks of the memory.~~

7. (Original) The method of claim 6, wherein the memory supports pipelining access.

8. (Original) The method of claim 6, wherein the memory is a SDRAM.

9. (Currently Amended) The method of claim 6, wherein the ~~calculating step further~~ identifying comprises ~~a reference function, as follows:~~ calculating a reference function that computes the physical address=~~Q*block_size+R*bank_-size~~ as Q*block_size+R*bank - size wherein bank_size equals a size of the memory divided by N and block_size is bank_size divided into multiple parts.

10. (Canceled)

11. (Currently Amended) The method of claim 9, further ~~comprises~~comprising:

reading the block of data according to the block index value and the reference function; and

recording the block of data to a destination ~~media~~medium, whereby the reading ~~step makes~~ includes reading each ~~one of the~~ block of data ~~read at~~ from different memory banks in turns and to save processing ~~result in~~ time ~~saving and reduces~~ by reducing pre-charge overloads by reading ~~in~~ one bank and ~~pre-charge in~~ pre-charging another bank ~~accessed just before~~.

12. (Currently Amended) An apparatus for operating a disc player with a memory, comprising:

means for retrieving a block of data from a disc;

means for generating a block index for the block of data;

means for dividing a value of the block index by N for acquiring a quotient Q and a reminder R, wherein N is ~~bank~~ a number of banks of the memory; and

means for calculating ~~the~~ a physical address of the memory in which to store the retrieved block of data based on Q and R, wherein the calculating means ~~makes~~ interleaves the block index ~~interleaved~~ at all times by mapping ~~to~~ the physical address ~~located at~~ to different unconnected banks ~~and~~ so that

any two logically successive blocks of data ~~be~~ are stored ~~physically~~ at different unconnected banks of the memory.

13. (Original) The apparatus of claim 12, wherein the memory supports pipelining access.

14. (Original) The apparatus of claim 12, wherein the memory is a SDRAM.

15. (Currently Amended) The apparatus of claim 12, wherein the means for calculating implements a reference function that computes ~~as follow:~~the physical as ~~address~~=Q*block_size+R*bank_size, wherein bank_size equals the memory size divided by N, and block_size is bank_size divided into multiple parts.

16. (Canceled)

17. (Canceled)

18. (Currently Amended) The method of claim ~~17~~20, wherein the memory supports pipelining access.

19. (Currently Amended) The method of claim ~~17~~20, wherein the memory is a SDRAM.

20. (Currently Amended) A method for accessing memory, comprising:
generating a plurality of block indexes for a plurality of blocks of data;
mapping the block indexes sequentially to a plurality of physical addresses of a memory based on the block indexes and a number N, wherein N is a number of banks of the memory wherein the mapping comprises:

dividing the block index by N to obtain a quotient Q and a remainder R; and

calculating the physical address based on Q and R, wherein the physical address=Q*block_size+R*bank_size, bank_size equals the memory size divided by N, and block_size equals the size of a plurality of sectors on an optical disc.; and

storing the block of data into the memory at the physical address, wherein the mapping makes each one of the block indexes map in turns to one physical address located at different banks so that any logical adjacent block of data is stored at different banks of the memory.~~The method of claim 17, the mapping steps further comprises:~~

21. (New) The method of claim 1 further comprising causing, while concurrently storing the block of data, a pre-charge for a memory bank other than the memory bank in which the block of data is stored while concurrently.

22. (New) The method of claim 6 further comprising causing, while concurrently storing the block of data, a pre-charge for a first memory-bank wherein the first memory bank is a separate memory bank from a second memory bank in which the block of data is stored.

23. (New) The method of claim 22 further comprising:

retrieving a second block of data from the source medium;

assigning a second block index for the second block of data, the second block index having a second block index value;

dividing the second block index value by N for acquiring a quotient Q1 and a remainder R2, wherein N is a number of banks of the memory;

identifying a second physical address based on Q and R wherein the second block index is interleaved at all times and maps to a physical address

located at different banks and any two logically successive blocks of data are stored at different banks of the memory; and

storing the second block of data in a second memory-bank of the memory at the identified second physical address while concurrently causing a pre-charge for a first memory-bank in which the block of data was previously stored.

24. (New) The method of claim 12 further comprising causing, while concurrently storing the block of data, a pre-charge for a memory bank other than the memory bank in which the block of data is stored.